USER MANUAL

iForks

Order Picker

CAUTION: This is a precise weighing system, treat with care. Environment and application will affect the system and its components. Conditions with mud, grime, water, corrosive chemicals and abrasive substances can damage or effect performance of the iForks.

Manual Number 6182775

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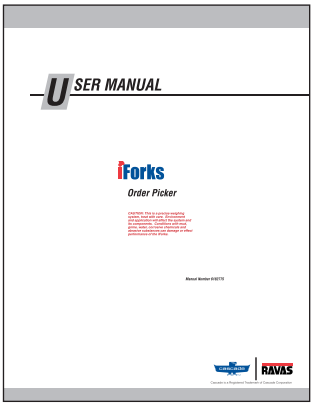
OVERVIEW

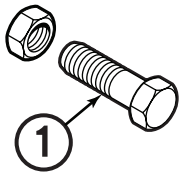
This manual describes the installation and use of the Order Picker iForks. Read this manual thoroughly prior to installation and operation. Be sure to know and understand all installation processes, operating procedures and safety operations. Perform installation and operation in the order shown in this manual.

This manual should be kept in a safe and dry place. In case of damage or loss, request a new copy of the manual from Cascade. Manuals are available at www.cascorp.com under the support tab, "Technical Support Manual" link.

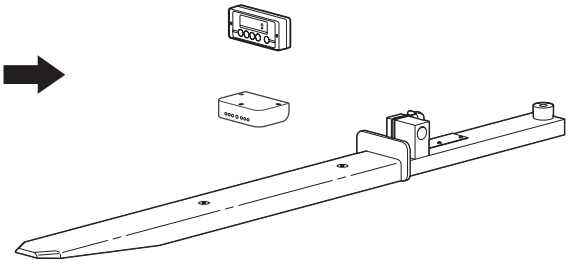
NOTE: For troubleshooting, refer to iForks Service Manual.



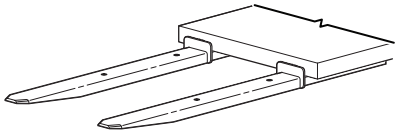
Read through this manual



Review parts



Install Order Picker iForks system to an operator compartment.



Use system

Perform Periodic Maintenance

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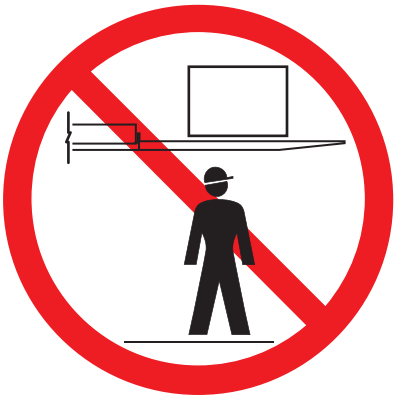
WARNINGS & SAFETY MEASURES

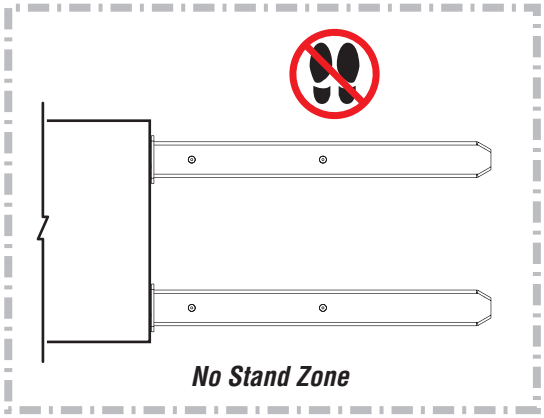
When using iForks, carefully read the instructions and guidelines contained in this manual. Follow the steps shown to install the iForks system onto the truck. If any of the instructions are not clear, please contact Cascade.

IMPORTANT: Field alterations may impair performance or capability and could result in loss of warranty. Consult Cascade for any required modifications.

No riders

No standing under load





No Stand Zone

CAUTION: Do not use iForks display in a moist environment for an extensive period.

WARNING: Cascade is not responsible for any physical harm done to the operator due to the presence of the display in the truck cabin.

WARNING: Do not operate iForks unless you are a trained and authorized lift truck driver.

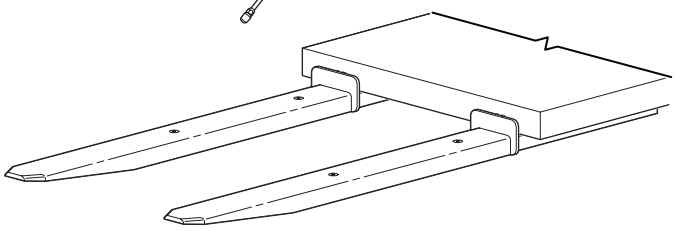
IMPORTANT: Cascade is not responsible for errors that occur due to incorrect weighing or inaccurate scales. It is the responsibility of the purchaser to train their employees and to properly maintain iForks.

IMPORTANT: All safety regulations that apply to the truck remain valid and unchanged. Always follow the operating, maintenance and repair instructions for the truck.

CAUTION: High humidity and liquid applications will damage iForks. Conditions with mud, grime, water, corrosive chemicals and abrasive substances can damage or effect performance of the iForks. Verify iForks are pretreated with a coating to help prevent rust and corrosion.

CAUTION: Environment and application can affect the iForks and how the system weighs. Verify that iForks suit proper conditions.

No Pressure Wash/Steam

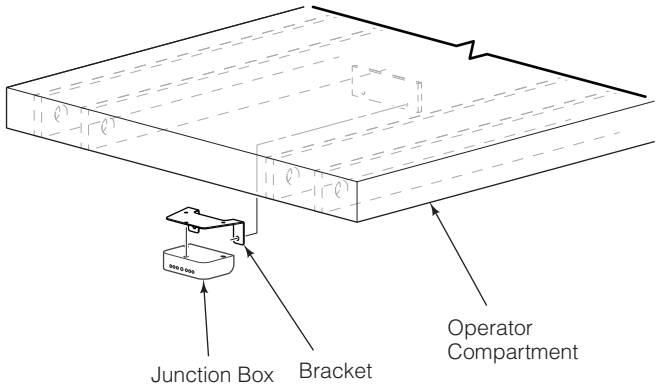


Optimal Temperature Range:
15° F (10° C) minimum
105°F (40° C) maximum

CAUTION: Install an electrostatic discharge strap to the truck chassis to prevent electrostatic discharge damage to the Order Picker iForks system.

1 Locate and mount bracket and junction box underneath the operator compartment.

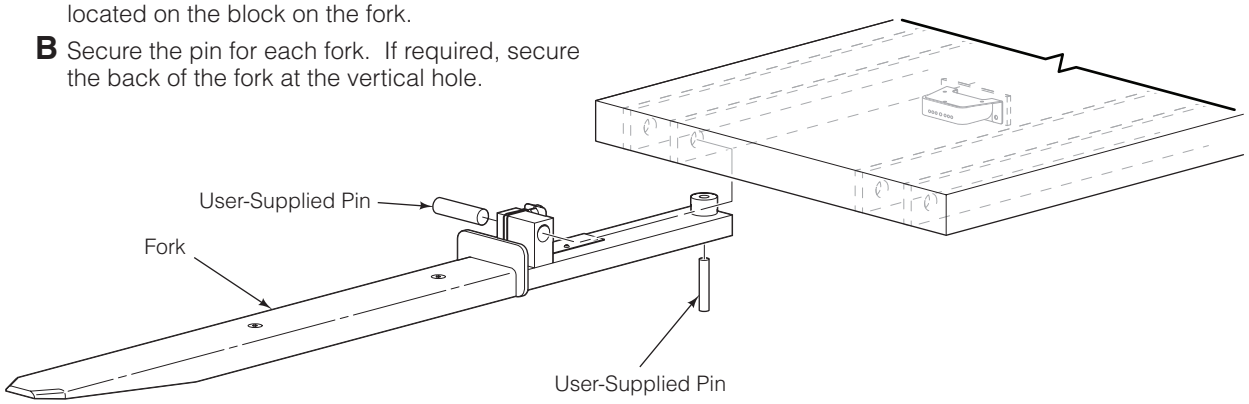
NOTE: The junction box and bracket should be close enough to the iForks so that each sensor connector can reach the junction box and each sensor receptacle.



2 Install iForks underneath the front operator compartment.

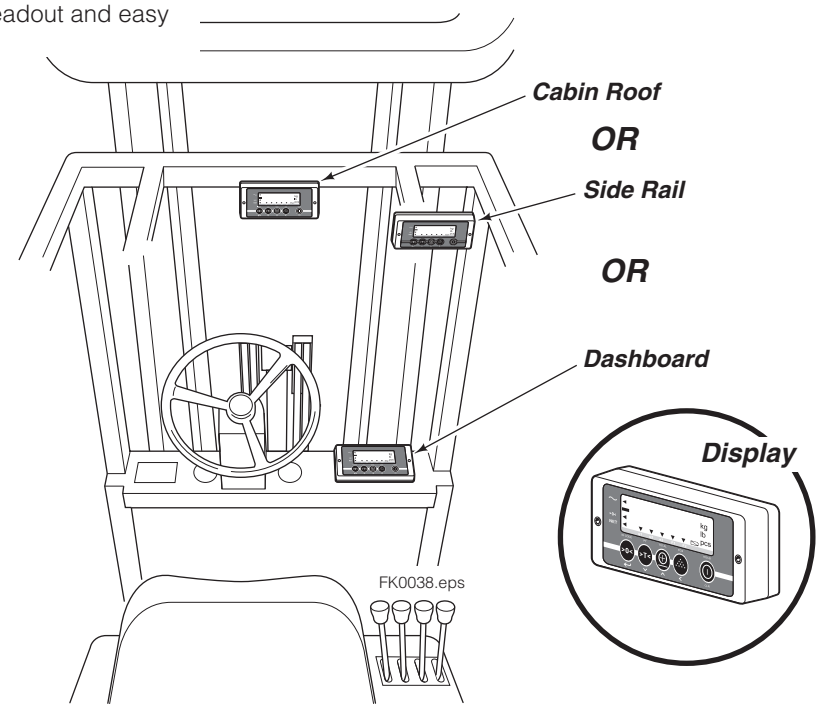
A Install user-supplied pin into the horizontal holes located on the block on the fork.

B Secure the pin for each fork. If required, secure the back of the fork at the vertical hole.



3 Locate and mount the display

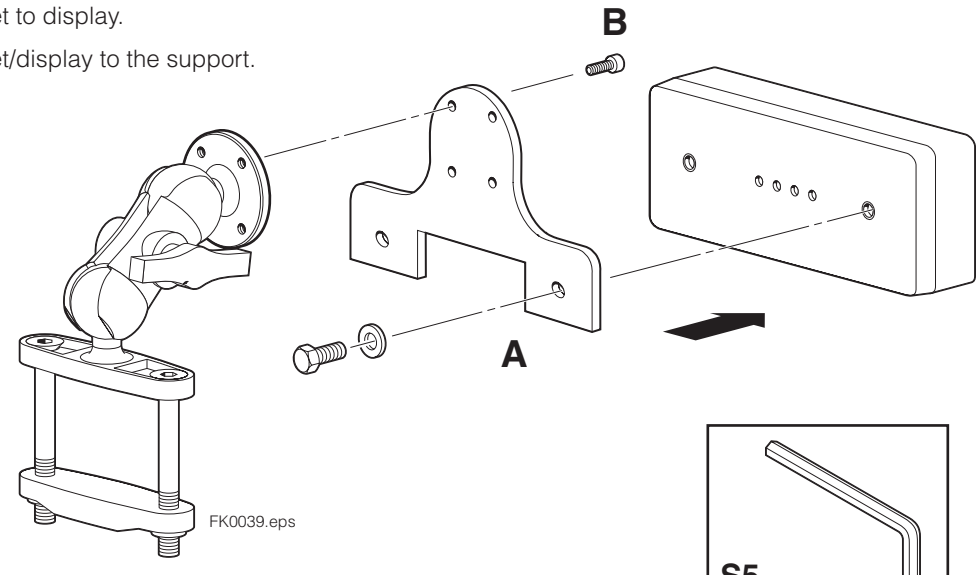
Find a suitable location for readout and easy access to display.

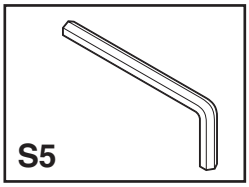


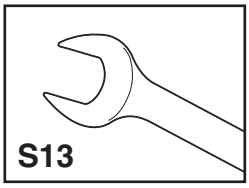
4 Install display bracket and support, if required

A Install bracket to display.

B Install bracket/display to the support.







5 Connect cables

A Connect the sensor connectors to each sensor receptacle.

B Connect cable end from the display to the junction box.

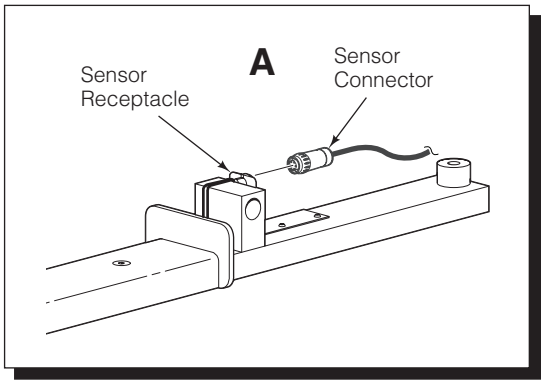
C Connect the RS232 cable to a laptop, handheld device or separate inventory control system.

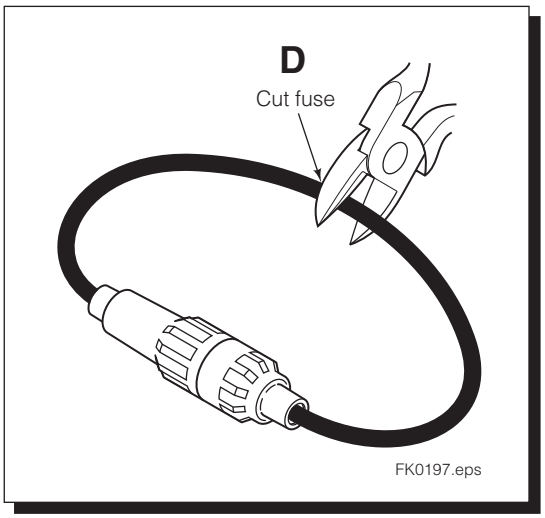
D Cut the provided fuse wire.

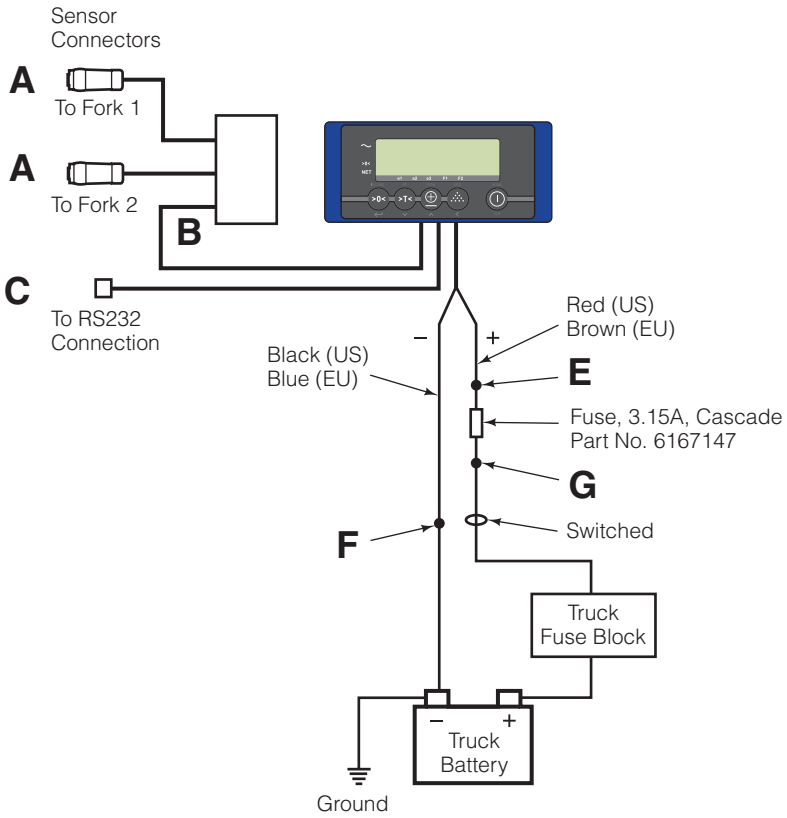
E Connect the fuse inline with the positive wire (red - US, brown - EU) to the display cable.

F Connect the display negative wire (black - US, blue - EU) to the negative battery terminal.

G Connect the detached end of the fuse to a switched positive power source.







Functions

Left of Display

When ◄ appears:

~ The weighing system (including load) is stable

>0< The weight shown is within the zero range

NET The display is showing the net weight

When ▬ appears, the weight shown is negative

Middle of Display

When ▼ appears:

e1 Weight shown is in .44 lb (.2 kg) steps; only for weight that ranges 0-441 lb (0-200 kg).

e2 Weight shown is in 1.1 lb (.5 kg) steps; only for weight that ranges 441-1102 lb (200-500 kg).

e3 Weight shown is in 2.2 lb (1 kg) steps; only for weight that ranges 1102-4850 lb (500-2200 kg).

F1 Fork 1 relay setpoint 1 is activated.

F2 Fork 2 relay setpoint 2 is activated.

NOTE: Smaller loads are weighed with higher accuracy. Example: If an original load with **e2** range selected is removed, and a smaller load qualified for **e1** range, the **e2** range will remain selected until the forks are zeroed.

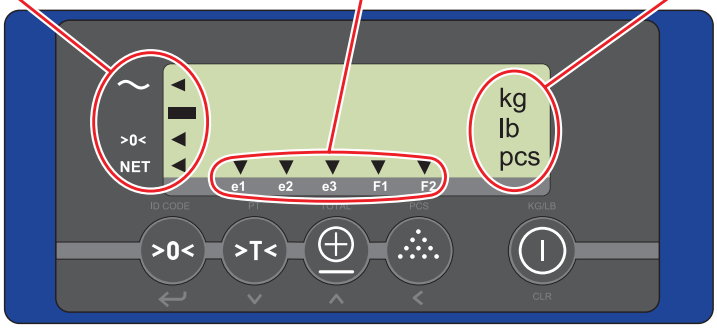
Right of Display

When the following appears:

kg Weight shown is in kilograms

lb Weight shown is in pounds

pcs Quantity displayed is the number of items on the scale



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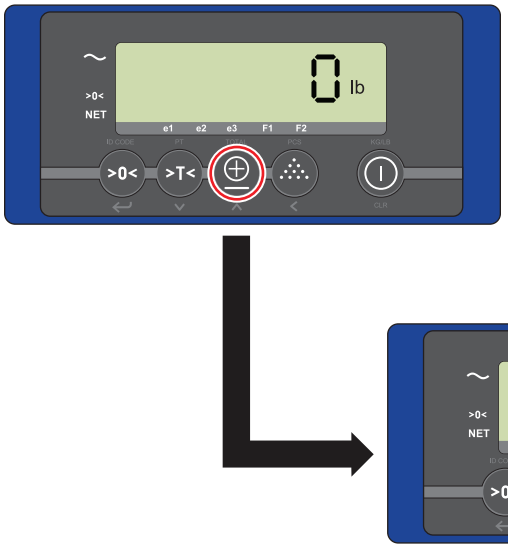
Display Button	Button Names	Short Button Press	3 Second Button Press	Entry Mode
ID CODE >0< ↵	"Zero"	>0< Zero Setting - Manually zeros the display.	ID CODE Code Entry - A 5-digit code useful for a weighing system connected to peripheral equipment for later processing.	↵ Enter (accept value)
PT >T< ˅	"Tare"	>T< Automatic Tare - Allows the tare weights to be reset to zero automatically. Added and subtracted weights can be determined.	PT Manual Tare - An entered tare weight at any moment.	˅ Decrease the value of the digit flashing
TOTAL ⊕ ^	"Total"	⊕ Add To Total – Weighed load is added to total weight. If printer is installed, a printout is made.	TOTAL Check subtotal and print total.	^ Increase the value of the digit flashing
PCS ⁘ <	"Sampling"	⁘ Sampling item weight(s) - Determine an unknown item weight by sampling a set quantity of the same kind of items. Standard sampling amount is 10 items.	PCS Sampling - Determine a quantity of the same items sampled with an known item weight.	< Shift to the next digit on the left
KG/LB ⏻ CLR	"On/Off"	KG/LB ⏻ On - Turn the display on. **OR** Toggle Units - Change the units on the display between kg and lb.	⏻ Off - Turn the display off.	CLR Clear entry

Other Features

Display Menus

The following menu options are available:



Weigh Mode

Options:
Manual zero
Net/Tare/Gross (Auto/Manual Tare)
Add and total a group of load weights
Sampling weight
On/off (or Toggle units)

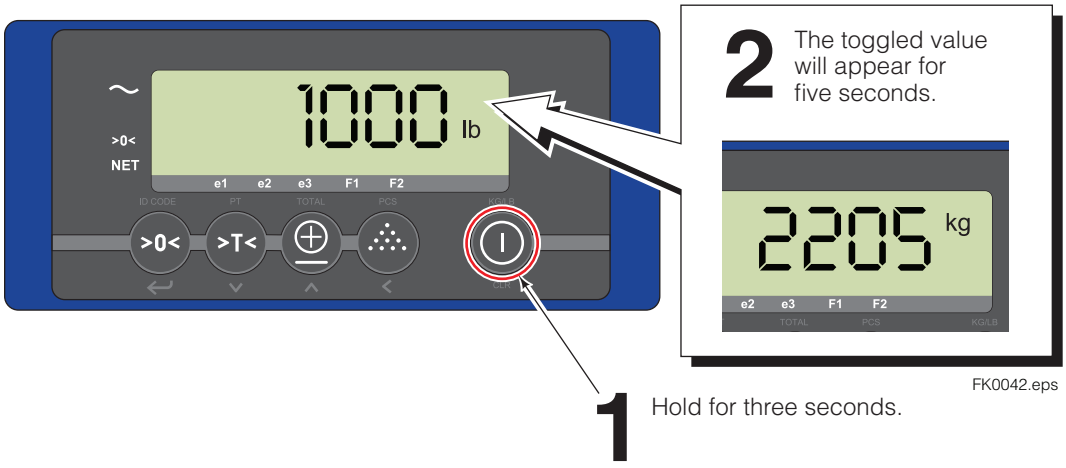
User Settings ◆

Auto shut-off time
Light intensity
Deactivate/Activate Com Port 1
Deactivate/Activate Com Port 2
Alibi Memory

◆ Refer to "Display Options – User Settings" Section, page 19.

Toggle Units (lb and kg)

To view a displayed value in another unit format (kg or lb) perform the following:



Display Messages

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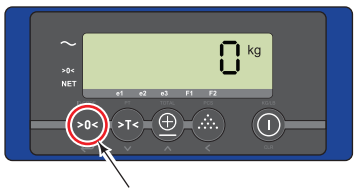
Error Messages

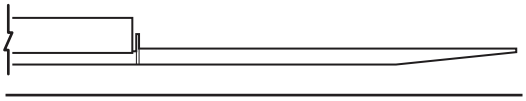
Display Shows:	Meaning:	To Exit Error Mode:
Err01	Load cell signal is unstable.	Automatic
Err02	iForks are overloaded.	Automatic after removing weight
Err03	Gross weight is negative. This action is not allowed.	Automatic
Err04	Out of zero range.	Press any button
Err05	Sampling accuracy too low.	Press any button
Err06	Input signal too high.	Automatic after correcting input
Err08	Calibration out of range (negative).	Automatic
Err09	Calibration out of range (signal too low).	Automatic
Err10	Calibration count 2nd (3rd) point is lower than count 1st (2nd) point.	Automatic
Err14	Calibration setpoint value 2 < setpoint value 1. This is not allowed.	Automatic
Err98	Entered weight used for weight calibration must be higher than previous entered weight.	Automatic
Err99	Button pressed or another action is performed while toggling between units format (lb or kg).	Wait for display to return to original unit format (lb or kg).
ErrF1	Problem with iFork 1 (no communication).	Restart display. Restart iForks & display.
ErrF2	Problem with iFork 2 (no communication).	Restart display. Restart iForks & display.
-----	Load cell signal negative.	Lift up the forks from the ground
ErrCS	Problem with correction sensor	Contact the Cascade Service department

Prior To Weighing



Verify the display shows zero. If necessary, press the Zero button.

Verify iForks are free of obstacles prior to zeroing



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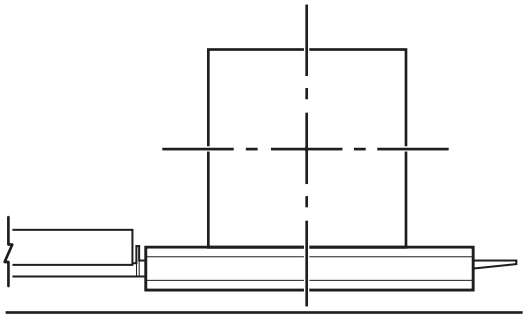
Optimal Temperature Range:
15° F (10° C) minimum
105° F (40° C) maximum

Handling Loads



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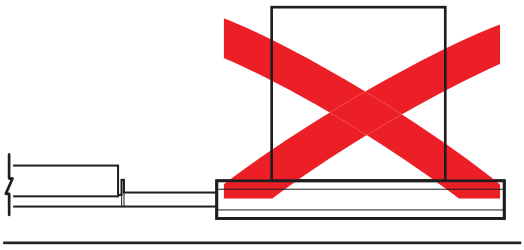
Center load on forks and pallet, load must be flat



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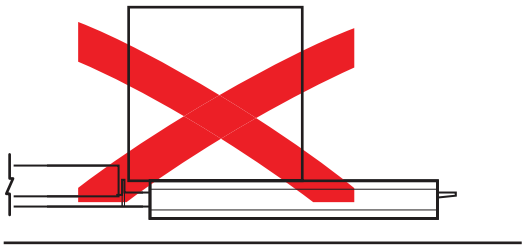

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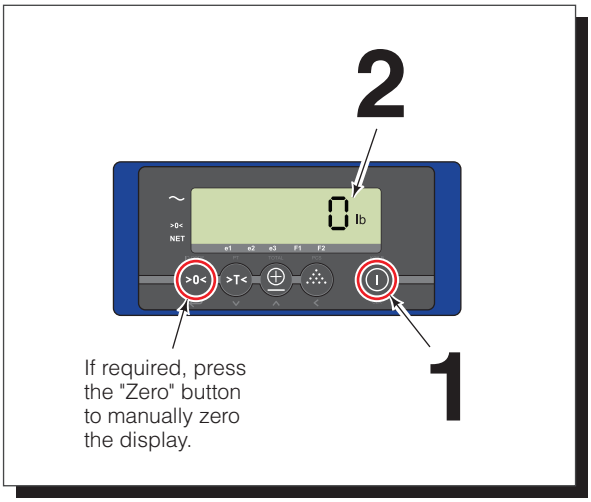
To Weigh A Load (Normal Weighing Mode)

IMPORTANT:

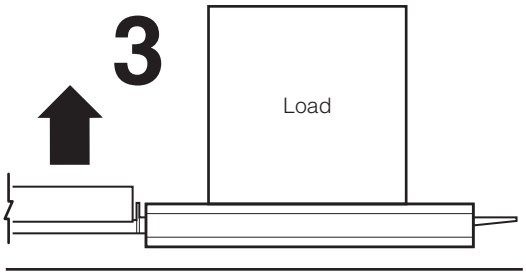
- At initial daily start up, allow 3-5 minutes for iForks system to warm up before weighing loads.
- The system will not weigh correctly if front face or bottom of iForks touches the load or pallet.
- Unstable weight readings indicate debris (ie. wood chips) between fork and fork shoe.
- When weighing liquids, more time is needed for display to show a steady weight.

1 On the display, press the "On/Off" button. Wait five seconds.

2 Display will zero. If necessary, zero manually by pressing the "Zero" button.



3 Position the load on the iForks and raise the iForks.



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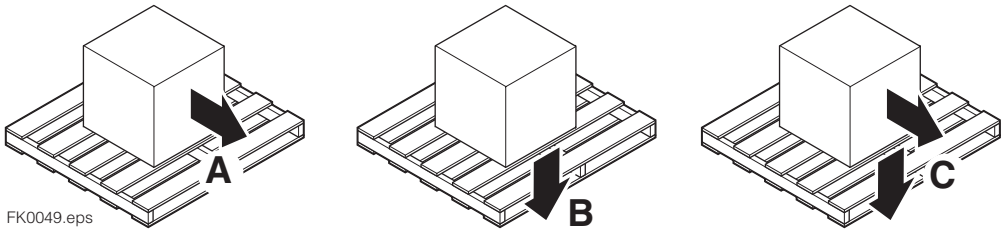
4 The display will show the weight of the load. If needed, the display may need more time to show a steady weight. Before next weighing, verify that the display is zeroed.

Obtaining Net/Tare/Gross Weight



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Net (A) + Tare (B) = Gross (C)

Net – The weight of the load being weighed.
Tare – The weight of an unladen load that is not included (pallet, bin, etc).
Gross – The combined weight of the load and unladen load.

Obtain Net Weight Using Automatic Tare

To weigh a load (**Net** weight) but disregard part of the load (**Tare** weight) with an **unknown** weight (example: pallet), perform the following procedure:

NOTE: The display must be in normal weighing mode prior to performing the following procedure.

1 If required, zero the display.

2 Position a pallet or bin (**Tare** weight) on forks and raise forks. The weight of the pallet or bin will show on the display.

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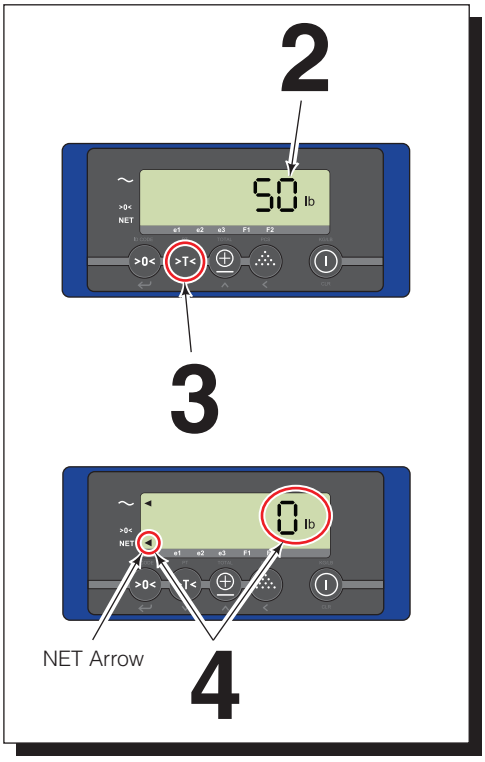


3 Press the "Tare" button.

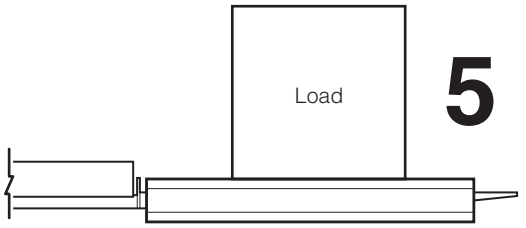
4 The display will be set to zero and the **Net arrow** will appear. The arrow indicates only **Net** weight values will show on the display.

Procedure continued on next page

Obtaining Net/Tare/Gross Weight (Continued)

***Obtain Net Weight Using Automatic Tare** (Continued)*

5 Add a load to weigh onto the iForks.



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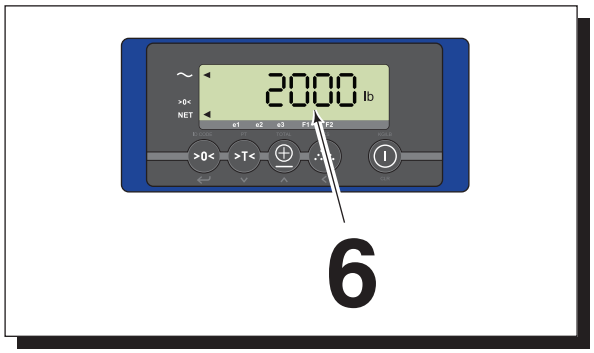
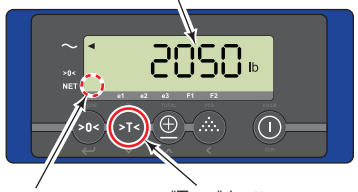
6 The display will show the **Net** weight (only the load's weight).



View *Gross* weight (*Tare* weight + *Net* weight):

Press the "Tare" button to view the **Gross** weight.

Gross Weight
Example: Pallet weight + Load weight



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Net Arrow will disappear

"Tare" button

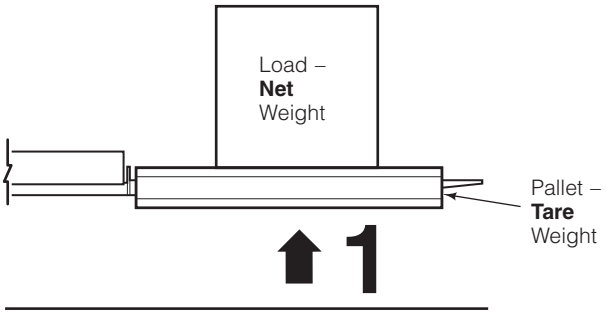
Obtaining Net/Tare/Gross Weight (Continued)

Obtain Net Weight Using Manual Tare

To weigh a load but disregard part of the load with a **known** weight (example: pallet):

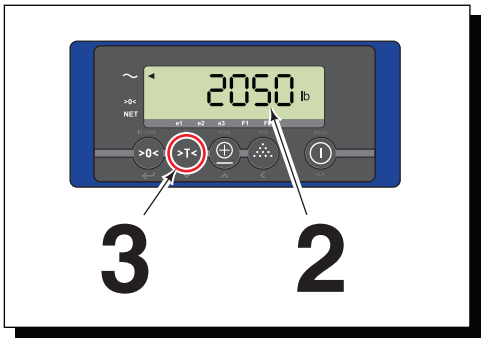
NOTE: The display must be in basic weighing mode prior to performing the following procedure.

1 Position a pallet or bin (**Tare** weight) and load (**Net** weight) on the iForks and raise the iForks.



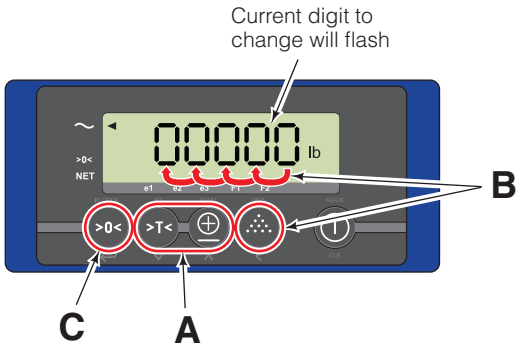
2 The **Gross** weight will show on the display.

3 Press and hold the "Tare" button for three seconds.



4 Enter the known **Tare** weight value of the pallet or bin. Use the *Entry Mode Guide* (below) as an aide to enter the value.

Entry Mode Guide



Use the following buttons to enter the value. The current digit to change will flash.

A >T< **OR** ⊕

Decrease the value — Increase the value

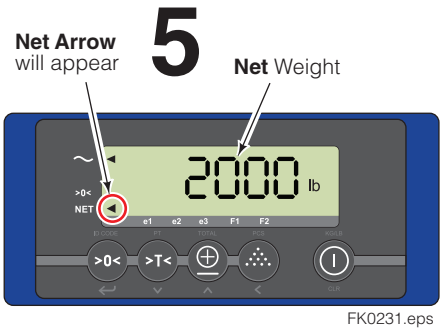
B — Shift to the next digit on the left

C >0< — Accept the value

5 The display will show the **Net** weight and the **Net arrow** will appear. The arrow indicates only **Net** values will show.

- If the load is removed from the pallet (or bin), the display will show zero.
- If the pallet (or bin) and load are removed, a negative weight (**Tare** weight) will show.

NOTE: Pressing the "Tare" button will show the **Gross** weight.

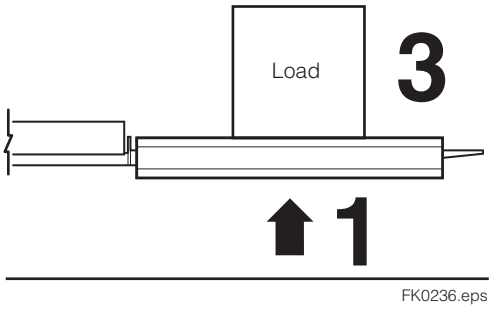


Adding And Totaling A Group Of Load Weights

1 If required, position a pallet or bin on forks. Raise iForks (and pallet or bin).

2 Zero the display.

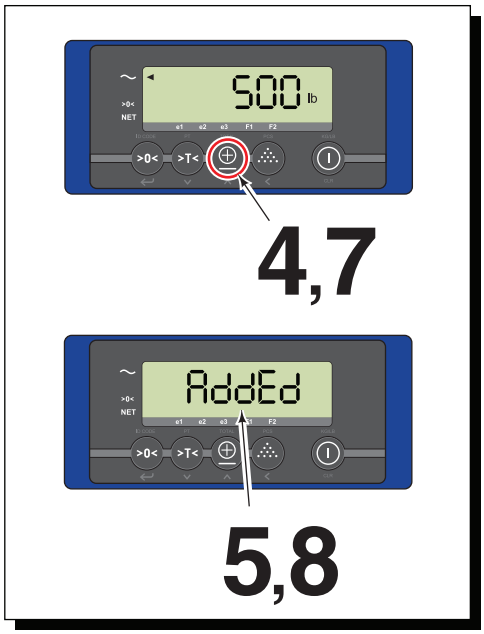
3 Add a load to weigh to the iForks.



FK0236.eps

4 Press the "Total" button. This will begin an adding sequence of the group to be weighed.

5 The display will show "Added" and return to normal weighing mode.



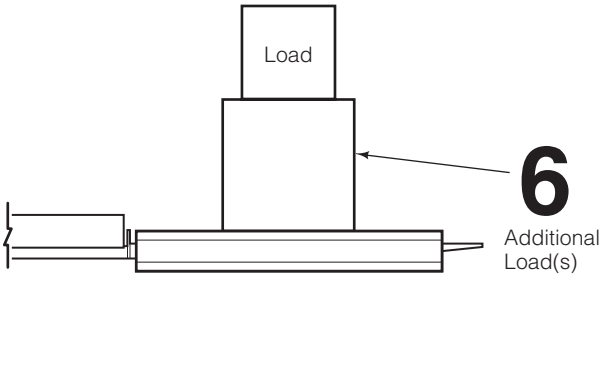
6 Add the next load to the pallet with previous load(s).

7 Press the "Total" button to add the weighed load to the total.

NOTE: If a printer is installed, the **Gross**, **Net** and **Tare** weights will be printed.

8 The display will show "Added" and return to weighing mode.

9 Repeat Steps 6-8 until all loads to be weighed are on the pallet and added to the total.



FK0237.eps

NOTE: At any time during weighing and adding, the subtotal can be viewed by pressing and holding the "Tare" button for three seconds. The counter (number of loads weighed) and subtotal will flash for three seconds.

Procedure continued on next page

Adding And Totaling A Group Of Load Weights (Continued)

10 When all loads are weighed, remove the loads from the iForks and pallet or bin.

11 Press and hold the "Tare" button for three seconds to view the total weight.

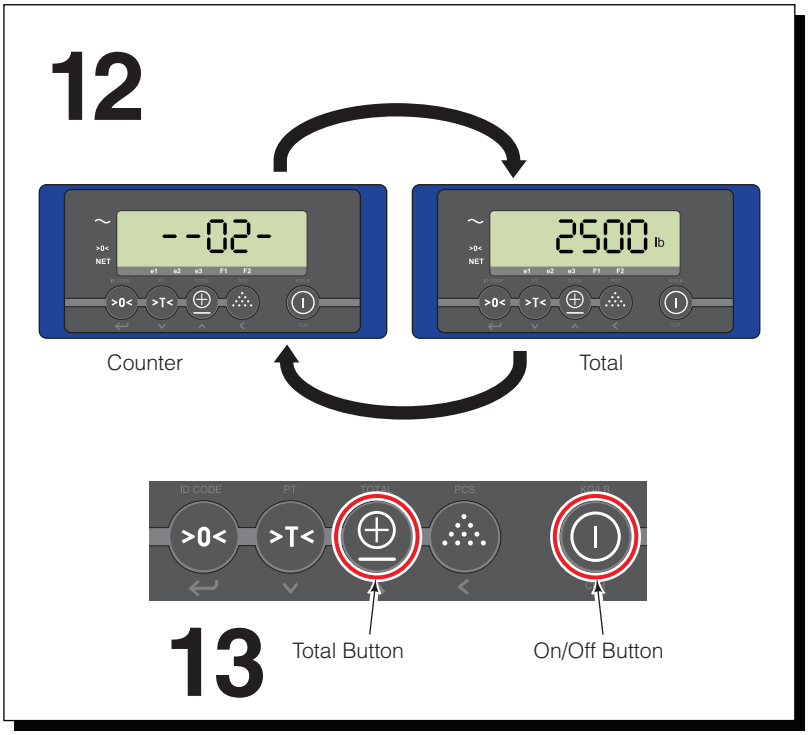
11

12 The counter (number of loads weighed) and total weight will flash for three seconds.

13 While the display screen flashes, the following can be performed:

- Press the "Total" button to print the total and reset the total weight to zero and the counter to zero.
- Press the "On/Off" button to reset the total weight to zero and the counter to zero.

NOTE: If no button is pressed while the display screen flashes, the total weight and counter value stays in the display's memory. The system will return to normal weighing mode.



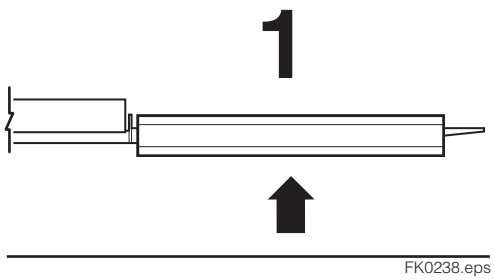
FK0222.eps

Sampling Weight

Perform the following procedure to determine an **unknown** item weight by sampling the weight of the number of the same kind of items. The number of items placed on the iForks determines the accuracy of the sampling. The greater the weight difference, the greater accuracy. The standard sampling amount is 10 items (95 items maximum). A display equipped with a printer is recommended for this section.

NOTE: The total weight of items must be greater than 22 lb (10 kg).

1 Position a pallet or bin on forks. Raise iForks and pallet (or bin).

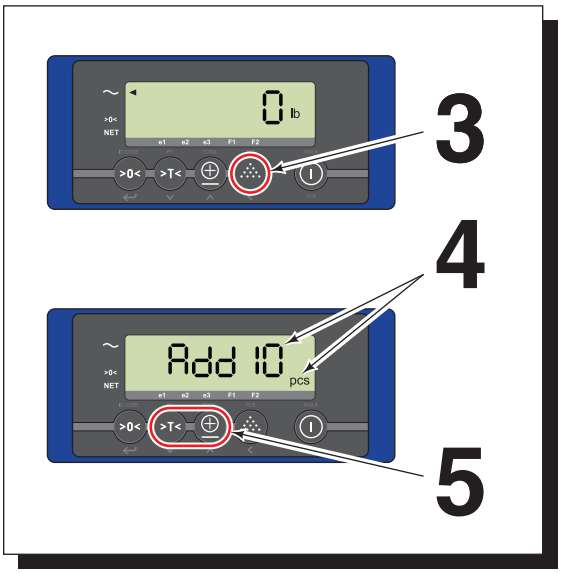


2 If required, zero the display.

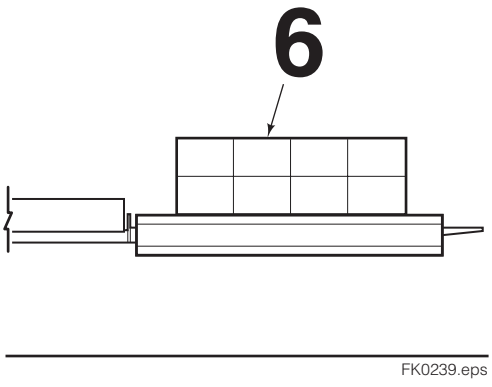
3 Press "Sampling" button on the display.

4 The display will show "Add 10" and "pcs".

5 Choose a quantity of items to weigh. "Add 10" is the standard. To change the number to another quantity, use the "Tare" (up) and "Total" (down) buttons to scroll through the list. The following quantity options are available: 10, 20, 50, 95, 1, 2, and 5.



6 Add the number of items, based on the quantity entered into the display, onto the pallet (or into the bin).

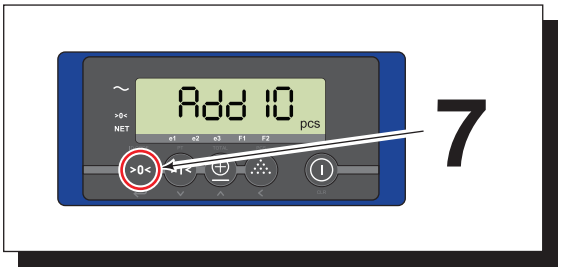


7 Press and hold the "Zero" button for two seconds.

NOTE: If the error message "Err05" appears, the total sampling weight is too low. Press any key to return normal weighing mode. Remove the items being weighed. Repeat Steps 3-7. Adjust the quantity in Step 4 to a higher quantity.

8 Sampling is complete. The display will show the total number (quantity) of pieces on the forks. Press the "On/Off" button return to normal weighing mode.

NOTE: If a printer is installed, item weight (print label: "PcWt") sampled and quantity (print label: "Qty") will be printed. Refer to "Printer Equipped" section, page 23.



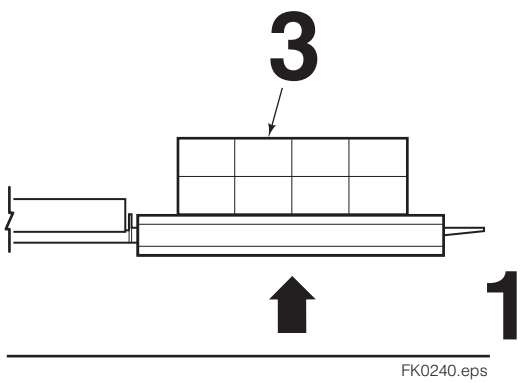
Sampling Quantity

Perform the following procedure to determine the quantity of the same items in a sampling using a **known** weight of one item. The items are placed on the iForks and weighed prior to entering the known weight.

1 Position a pallet or bin on iForks. Raise fork and pallet (or bin).

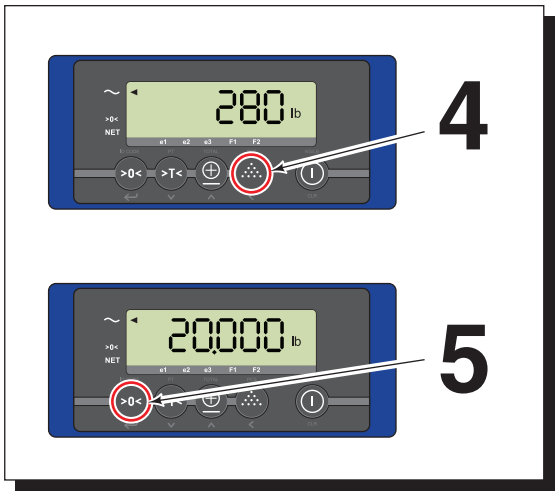
2 If required, zero the display.

3 Place the items onto the pallet (or into the bin).

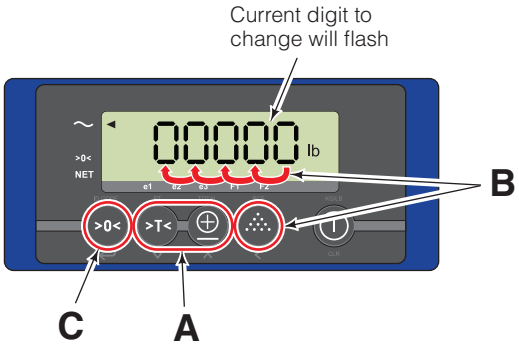


4 After the weight shows on the display, press and hold "Sampling" button for three seconds.

5 A previous item weight will show on the display. Press the "Zero" button to accept the value or change the value using the *Entry Mode Guide* (below) as an aide to enter the weight value.



Entry Mode Guide



Use the following buttons to enter the value. The current digit to change will flash.

A >T< OR ⊕

Decrease the value

Increase the value

B <

Shift to the next digit on the left

C >0< ↵

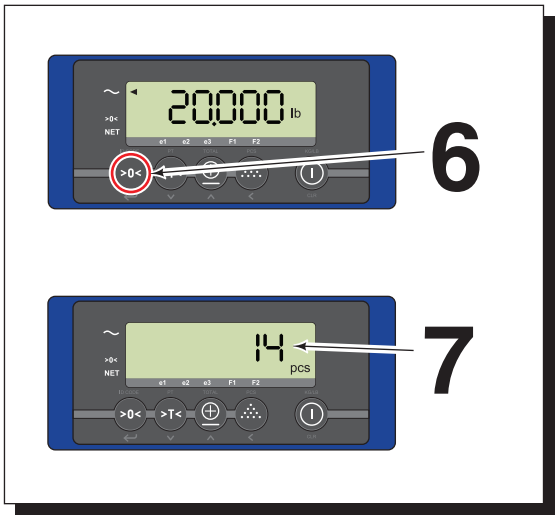
Accept the value

Sampling Quantity (Continued)

6 Press and hold the "Zero" button for two seconds.

7 The display will show the quantity of items currently being weighed. Press the "On/Off" button to return to normal weighing mode.

NOTE: If a printer is installed, item weight (print label: "PcWt") sampled and quantity (print label: "Qty") will be printed. Refer to "Printer Equipped" section, page 23.



FK0229.eps

AUTO SHUT-OFF

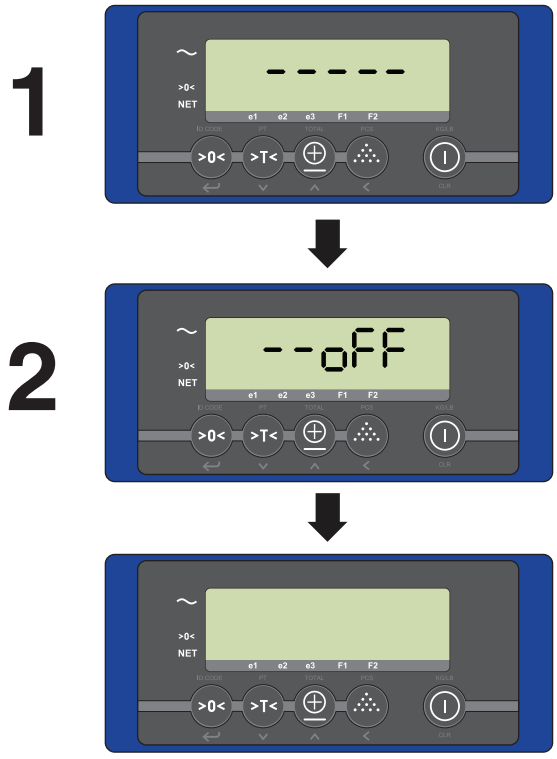
After 2 minutes of no action:

1 On the display, a countdown screen shows. Press any button to cancel auto shut-off and return to normal weighing mode.

2 After 20 seconds of no further action, "- - off" will appear on the screen. The display will turn off.

3 After 2 hours of no weighing, the iForks will turn off.

NOTE: To turn on, refer to "To Weigh A Load" section, page 10.



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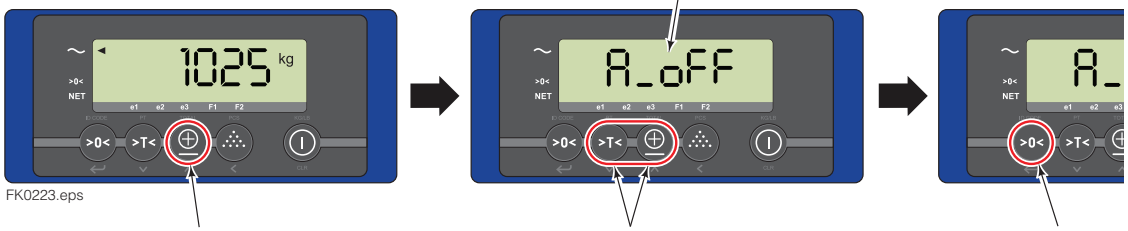
User Settings

Enter User Setting Menu



FK0223.eps

1 To enter user settings, hold the "Total" button for ten seconds.

NOTE: Multiple screens will flash while button is held.

2 Choose a user setting menu option by scrolling through the list. Options available are as follows:

"A_off "– Auto Shut-Off Time (Display)
"Light" – Light Intensity
"Conn1" – Deactivate/Activate Com Port 1 (Bluetooth board) ①
"Conn2" – Deactivate/Activate Com Port 2 (Printer board)

3 Press the "Zero" button to confirm the selected user setting menu option and enter the menu option's submenu.

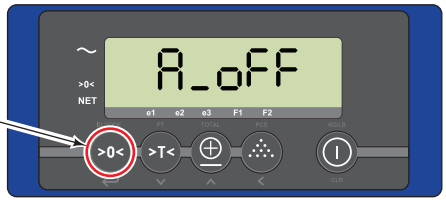
4 Continue to selected submenu (go to next page)

① **NOTE:** Communication Port 1 can not be deactivated.

Exit User Settings

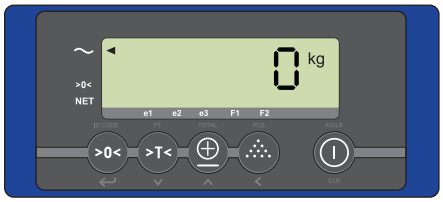
To Save and Exit:

1 Press and hold the "Zero" button for three seconds



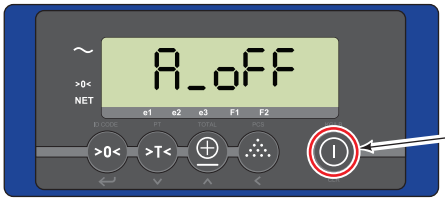
2 A screen will show as changes are saved.

3 The display will return to normal weighing mode

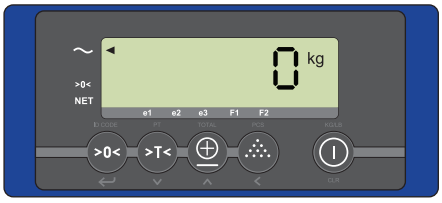


FK0224.eps

To Exit without Saving:



1 Press "On/ Off" button



2 The display will return to normal weighing mode

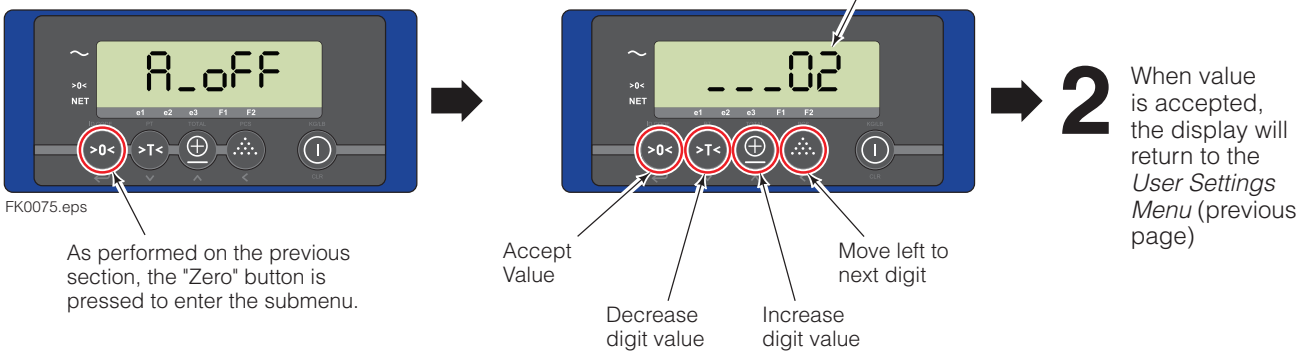
User Settings (Continued)

Change Submenu Settings

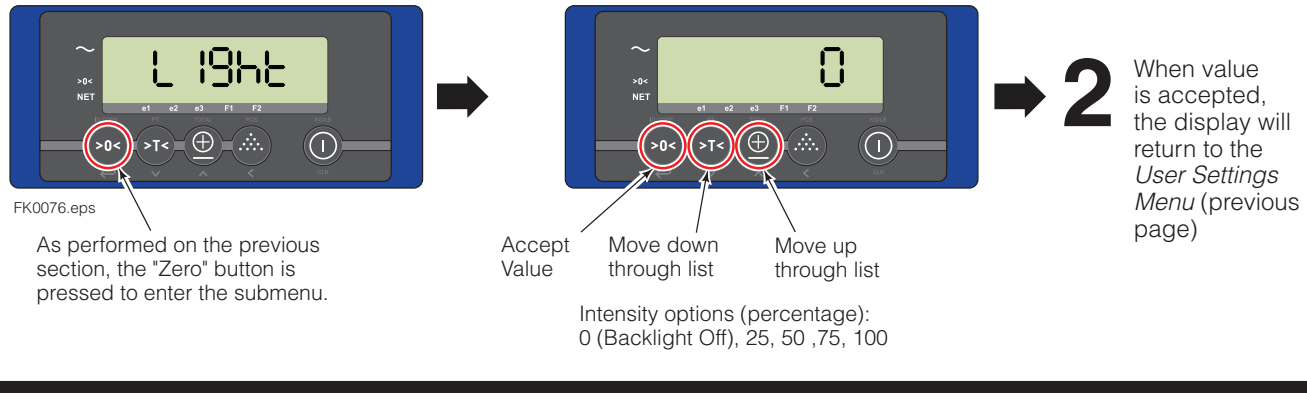
NOTE: To access User Setting Submenus, refer to the previous page, "Enter User Settings Menu" to select the appropriate submenu.

Auto Shut-Off Menu (Display)

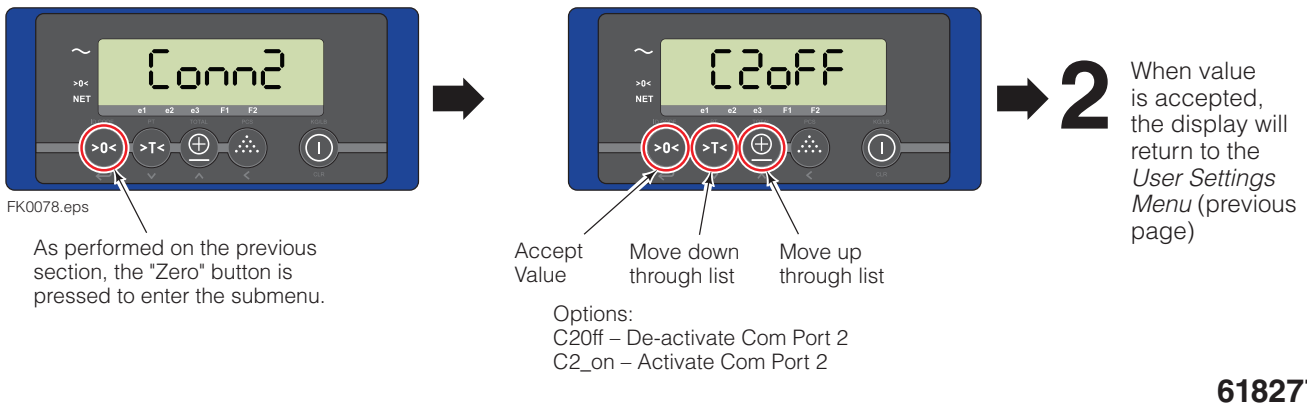
NOTE: Auto shut-off is set to zero only when the display is hardwired to the truck power.


1
Change time and accept the value by pressing the "Zero" button.
Selected digit (minutes) flashes
A_oFF
_ _ _02
>0<
>T<
FK0075.eps
As performed on the previous section, the "Zero" button is pressed to enter the submenu.
Accept Value
Decrease digit value
Increase digit value
Move left to next digit
2
When value is accepted, the display will return to the *User Settings Menu* (previous page)

Backlight Intensity Menu


1
Scroll through the list of intensity options and accept the value by pressing the "Zero" button.
L 19ht
0
>0<
>T<
FK0076.eps
As performed on the previous section, the "Zero" button is pressed to enter the submenu.
Accept Value
Move down through list
Move up through list
Intensity options (percentage):
0 (Backlight Off), 25, 50 ,75, 100
2
When value is accepted, the display will return to the *User Settings Menu* (previous page)

Com Port 2 Menu (Printer Board)

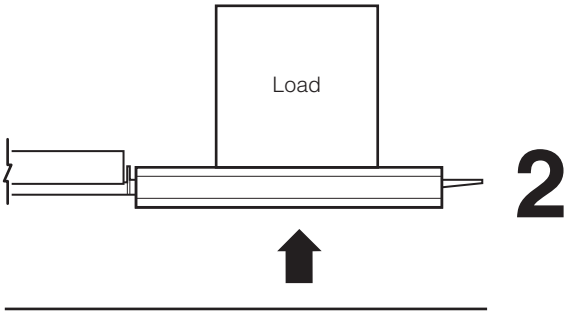

1
Scroll through the list of options and accept the value by pressing the "Zero" button.
Conn2
C2oFF
>0<
>T<
FK0078.eps
As performed on the previous section, the "Zero" button is pressed to enter the submenu.
Accept Value
Move down through list
Move up through list
Options:
C20ff – De-activate Com Port 2
C2_on – Activate Com Port 2
2
When value is accepted, the display will return to the *User Settings Menu* (previous page)

Print Weight

1 If required, zero the display.

2 Position load on iForks and raise iForks.

3 Weigh the load.

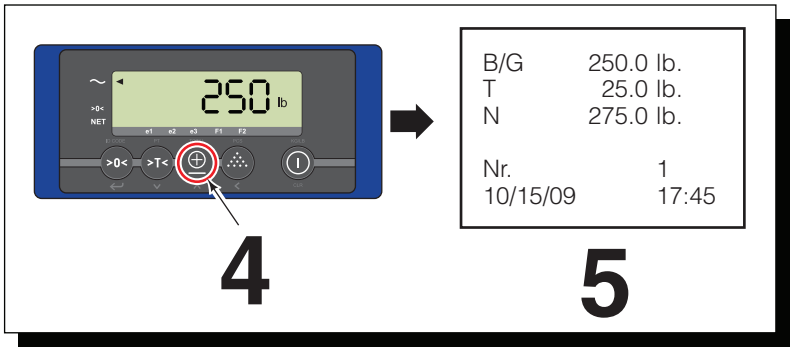


FK0241.eps

4 Press the "Total" button to print.

5 Printer will print out load weight.

NOTE: This will add the weight to the total weight.



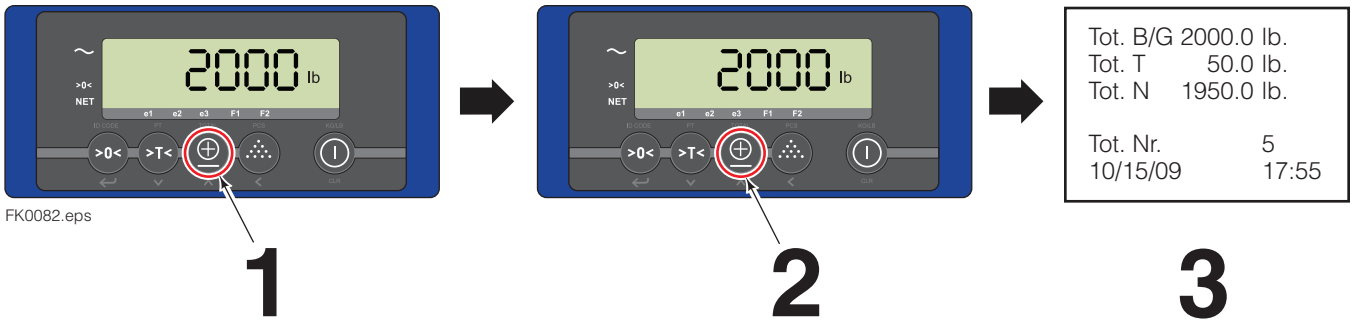
Print Total Weight

1 Press and hold the "Total" button for three seconds.

2 Press the "Tare" button to print.

IMPORTANT: The load must be removed from the iForks before pressing the "Tare" button.

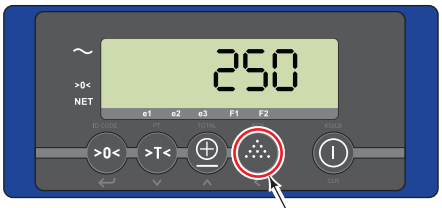
3 Printer will print out the total load weight.



FK0082.eps

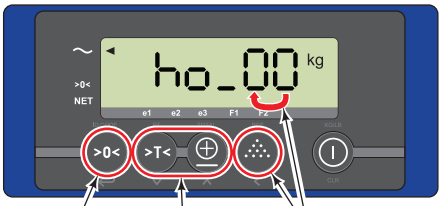
Change Time & Date Printout

NOTE: For Steps 2-6, refer to the *Entry Mode Guide* (below) to change the time and date values.



1 Press and hold the "Sampling" button for 8 seconds

Entry Mode Guide



Use the following buttons to change the value. The current digit to change will flash.

A >T< **OR** ⊕

- >T<: Decrease the value
- ⊕: Increase the value

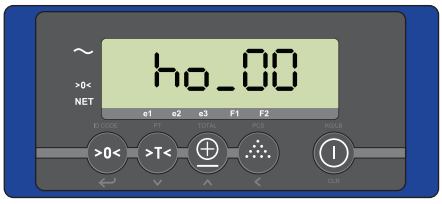
B <

Shift to the next digit on the left

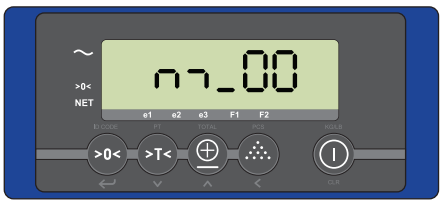
C >0< ↵

Accept the value

FK0083.eps

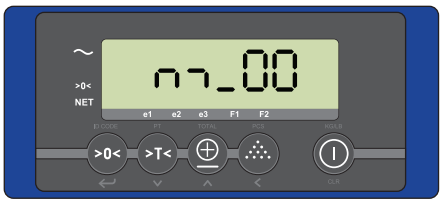


2 Enter the hour



3 Enter the minute

4 Enter the day



5 Enter the month

6 Enter the year

7 The display will return to normal weighing mode.

NOTE: If a printer is installed, the date and time will print with weight information.

IMPORTANT: Only trained and authorized personnel are allowed to service iForks Other maintenance procedures are the sole responsibility of the purchaser.

IMPORTANT: To prevent weighing inaccuracies, the end user is responsible to check accuracy on a regular basis at intervals that best fit their application and requirements. Development of a periodic schedule will prevent faulty readings. Cascade recommends a **minimum** interval of every 12 months or 2000 hours, whichever comes first.

Daily Inspection

Check the following items below each day:

- Inspect the bottom of the forks for debris that might be wedged between the fork and the fork shoe. Remove any debris found.
- Inspect fork pin connections.

100-Hour

Every time the lift truck is serviced or every 100 hours of truck operation, whichever comes first, complete the following maintenance procedures:

- Check for debris between fork and fork shoe (ie. wood chips).
- Inspect the bottom of the forks for debris that might be wedged between the fork and the fork shoe. Remove any debris found.
- Check for pinched wires.
- Tighten fork shoe capscrews after initial 100 hours of service. Tighten to a torque of 80 ft.-lbs. (108 Nm). As necessary, replace the cover spool, fork shoe capscrews and nuts.

Cleaning iForks

As required, use a mild cleanser and wipe down the forks with a towel. Rinse the fork with a non-pressurized stream of water.

CAUTION: Do not rinse display.

Do you have questions you need answered right now? Call your nearest Cascade Service Department.
Visit us online at www.cascorp.com

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